IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1   1.   (Currently amended) A method for managing access to a resource, the method
2   comprising the computer-implemented steps of:
3   sending, from a requestor to a master of the resource, a lock mode request for a
4   lock mode on the resource;
5   receiving the resource at the requestor from a holder of the resource; and
6   accessing the resource as if the requestor had been granted the lock mode request
7   without waiting to receive an express lock mode grant from the master.

1   2.   (Currently amended) The method of Claim 1, further comprising the computer-
2   implemented steps of:
3   detecting [[whether]] that the step of receiving the resource at the requestor [[will
4   occur]] has occurred; and
5   if the requestor does receive the resource sending a lock assume message, from
6   the requestor to the master, to inform the master that the requestor has
7   assumed the lock mode relative to the resource.

1   3.   (Currently amended) A method for managing access to a resource, the method
2   comprising the computer-implemented steps of:
3   receiving, at a holder, an inform lock holder message that a requestor needs the
4   resource, where the holder currently holds the resource and a first lock
5   mode on the resource;
6   transferring the resource to the requestor in response to receiving the inform lock
7   holder message without sending a status message to a master of the
8   resource wherein the status message is a down-convert message or a
9   release lock message; and

2

10   updating a lock mode record, maintained by the holder, to indicate that the holder

11   has down-converted from the first lock mode to a second lock mode for

12   the resource.

1   4.   (Currently amended) The method of [[for]] Claim 3, further comprising the

2   computer-implemented [[steps]] step of:

3   sending an update lock message to the master, wherein the update lock message

4   indicates the second lock mode for the resource.

1   5.   (Currently amended) The method of [[for]] Claim 3, further comprising the

2   computer-implemented steps of:

3   receiving, at the holder, a message from a sender[[;]], wherein the message

4   includes a third lock mode on the resource;

5   detecting that the first lock mode and the third lock mode do not match; and

6   sending a lock status message to the sender[[;]], wherein the lock status message

7   includes the first lock mode.

1   6.   (Currently amended) The method of [[for]] Claim 3, further comprising the

2   computer-implemented steps of:

3   receiving, at the holder, a single batched inform lock holder message that contains

4   all information necessary to transfer the resource to a plurality of

5   requestors; and

6   transferring the resource to the plurality of requestors.

1   7.   (Currently amended) The method of [[for]] Claim 3, further comprising the

2   computer-implemented [[steps]] step of:

3   sending a lock access message from the holder to a master.

1   8.   (Currently amended) A method for managing access to a resource, the method

2   comprising the computer-implemented steps of:

3   receiving, at a master, a request message which indicates that a requestor needs a

3

4   particular resource of a plurality of resources, where the master maintains

5   a plurality of lock mode records corresponding to the plurality of

6   resources;

7   sending, from the master to a holder, an inform lock holder message to indicate to

8   the holder that the requestor needs the particular resource;

9   receiving a lock access message from the requestor where the lock access message

10   indicates that the requestor has assumed a lock mode relative to the

11   particular resource; and

12   performing an update to a particular lock mode record of the plurality of lock

13   mode records in response to receiving the lock access message[[;]],

14   wherein the update indicates that the requestor has assumed the lock mode

15   on the particular resource.

1   9.   (Currently amended) [[A]] The method of [[for]] Claim 8, wherein the computer-

2   implemented step of performing an update to a particular lock mode record of the

3   plurality of lock mode records in response to receiving the plurality of lock mode

4   records in response to receiving the lock access message[[:]] is performed prior to

5   receiving any status message from the holder relating to the particular

6   resource[[;]], and wherein the status message is a down-convert message or a

7   release lock message.

1   10.   (Currently amended) The [[A]] method of [[for]] Claim 8, wherein the computer-

2   implemented step of performing an update to a particular lock mode record of the

3   plurality of lock mode records in response to receiving the plurality of lock mode

4   records in response to receiving the lock access message[[:]] is performed without

5   receiving the status message from the holder relating to the particular

6   resource[[;]], and wherein the status message is a down-convert message or a

7   release lock message.

1   11.   (Currently amended) The method [[for]] of Claim 8, further comprising the

2   computer-implemented [[step]] steps of:

3   receiving, at the master, a plurality of request messages which indicate that a

4   plurality of requestors need the particular resource; and

5   sending from the master to the holder the inform lock holder message, wherein the

6   inform lock holder message contains all information from the plurality of

7   request messages that is necessary for the holder to transfer the particular

8   resource to the plurality of requestors.

1   12.   (Currently amended) The method [[for]] of Claim 8, further comprising the

2   computer-implemented [[step]] steps of:

3   receiving, at the master, a message from a sender[[;]], wherein the message

4   includes a second lock mode on the particular resource;

5   detecting that the lock mode and the second lock mode do not match; and

6   sending a lock status message to the sender[[;]], wherein the lock status message

7   includes the lock mode.

1   13.   (Currently amended) The method [[for]] of Claim 8, further comprising the

2   computer-implemented [[step]] steps of:

3   receiving, at the master, a second request message[[;]], wherein the request

4   message and the second request message both contain requests for the

5   resource in exclusive lock mode; and

6   [[queueing]] queuing the second request message until the master receives the

7   lock access message from the requestor.

1   14.   (Currently amended) A method for managing access to a resource, the method

2   comprising the computer-implemented steps of:

3   receiving, at a master, a request message which indicates that a requestor needs a

4   particular resource of a plurality of resources, where the master maintains

5   a plurality of lock mode records corresponding to the plurality of

6   resources;

7   designating one holder out of a plurality of holders wherein the plurality of

8   holders all have respective lock modes for the particular resource;

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9   sending a plurality of broadcast inform lock holder messages to the plurality of

10   holders except for the one holder indicating that the requestor needs the

11   particular resource;

12   receiving a plurality of update lock messages from the plurality of holders except

13   for the one holder[[;]], wherein the a plurality of update lock messages

14   indicates the respective lock modes of the plurality of holders;

15   sending, from the master to the one holder, an inform lock holder message to

16   indicate to the one holder that the requestor needs the particular resource;

17   receiving a lock access message from the requestor where the lock access message

18   indicates that the requestor has assumed a lock mode relative to the

19   particular resource; and

20   performing an update to a particular lock mode record of the plurality of lock

21   mode records in response to receiving the lock access message without

22   receiving a status message[[;]], wherein the status message is a down-

23   convert message or a release lock message[[;]], and wherein the update

24   indicates that the requestor has assumed the lock mode on the particular

25   resource.

1   15.   (Currently amended) A computer system, comprising:

2   a processor;

3   a [[memory]] computer-readable medium storing having stored instructions of the

4   computer system [[causing]] which, when executed by the processor, cause the

5   processor to perform the computer-implemented steps of:

6   sending, from a requestor to a master of a resource, a lock mode request for the

7   lock mode on the resource;

8   receiving the resource at the requestor from a holder of the resource; and

9   accessing the resource as if the requestor had been granted the lock mode request

10   without waiting to receive an express lock mode grant from the master.

1   16.   (Currently amended) The computer system of Claim 15, wherein the memory

2   having stored instructions of the computer system causing the processor to

3   ~~perform~~ the computer-implemented steps further ~~comprising~~ <u>comprise</u> the

4   computer-implemented <u>steps</u> ~~step~~ of:

5   detecting [[whether]] <u>that</u> the step of receiving the resource at the requestor [[will

6   occur]] <u>has occurred</u>; and

7   ~~if the requestor does receive the resource;~~ sending a lock assume message from

8   the requestor to the master to inform the master that the requestor has

9   assumed the lock mode relative to the resource.

1   17.   (Currently amended) A computer system<u>,</u> comprising:

2   a processor;

3   a [[memory]] <u>computer-readable medium</u>, coupled to the processor, containing:

4   a particular lock mode record of a plurality of lock mode records

5   corresponding to a lock mode of a particular resource of a plurality

6   of resources, where a master maintains the plurality of lock mode

7   records corresponding to the plurality of resources[[;]]<u>, wherein the</u>

8   <u>computer-readable medium stores</u> [[having stored]] instructions of

9   the computer system<u> which, when executed by the processor, cause</u>

10   [[causing]] the processor to perform the computer-implemented

11   steps of:

12   receiving<u>,</u> at the master<u>,</u> a request message which indicates that a

13   requestor needs the particular resource of the plurality of

14   resources, where the master maintains the plurality of lock

15   mode records corresponding to the plurality of resources;

16   sending<u>,</u> from the master to a holder<u>,</u> an inform lock holder

17   message to indicate to the holder that the requestor needs

18   the particular resource;

19   receiving a lock access message from the requestor where the lock

20   access message indicates that the requestor has assumed the

21   lock mode relative to the particular resource; and

22   performing an update to the particular lock mode record of the

23   plurality of lock mode records in response to receiving the

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24   lock access message without receiving a status

25   message[[;]],

26   wherein the status message is a down-convert message or a release

27   lock message[[;]], and

28   wherein the update indicates that the requestor has assumed the

29   lock mode on the particular resource.

1   18.   (Currently amended) The computer system [[for]] of Claim 17, wherein the

2   computer-implemented step of performing an update to a particular lock mode

3   record of the plurality of lock mode records in response to receiving the lock

4   access message[[:]] is performed prior to receiving any status message from the

5   holder relating to the particular resource, and wherein the status message is a

6   down-convert message or a release lock message.

1   19.   (Currently amended) The computer system [[for]] of Claim 17, wherein the

2   computer-implemented step of performing an update to a particular lock mode

3   record of the plurality of lock mode records in response to receiving the plurality

4   of lock mode records in response to receiving the lock access message[[:]] is

5   performed without receiving the status message from the holder relating to the

6   particular resource, and wherein the status message is a down-convert message or

7   a release lock message.

1   20.   (Currently amended) The computer system of Claim 17, wherein the memory

2   having stored instructions of the computer system causing the processor to

3   perform the computer-implemented steps further comprising comprise the

4   computer-implemented [[step]] steps of:

5   receiving, at the master, a plurality of request messages which indicate that a

6   plurality of requestors need the particular resource; and

7   sending, from the master to the holder, the inform lock holder message, wherein

8   the inform lock holder message contains all information from the plurality

9   of request messages that is necessary for the holder to transfer the

10   particular resource to the plurality of requestors.

1   21.   (Currently amended) The computer system of Claim 17, wherein ~~the memory~~

2   ~~having stored instructions of the computer system causing the processor to~~

3   ~~perform~~ the computer-implemented steps further ~~comprising~~ comprise the

4   computer-implemented [[step]] steps of:

5   receiving, at the master, a message from a sender[[;]], wherein the message

6   includes a second lock mode on the particular resource;

7   detecting that the lock mode and the second lock mode do not match; and

8   sending a lock status message to the sender, wherein the lock status message

9   includes the lock mode.

1   22.   (Currently amended) The computer system [[for]] of Claim 17, wherein the

2   computer-implemented steps further ~~comprising~~ comprise the computer-

3   implemented [[step]] steps of:

4   receiving, at the master, a second request message wherein the request message

5   and the second request message both contain requests for the resource in

6   exclusive lock mode; and

7   ~~queueing~~ queuing the second request message until the master receives the lock

8   access message from the requestor.

1   23.   (Currently amended) A computer system, comprising:

2   a processor;

3   a [[memory]] computer-readable medium, coupled to the processor, containing:

4   a particular lock mode record of a plurality of lock mode records

5   corresponding to a lock mode of a particular resource of a plurality

6   of resources, where a master maintains the plurality of lock mode

7   records corresponding to the plurality of resources[[;]], wherein the

8   computer-readable medium stores ~~having stored~~ instructions of the

9   computer system which, when executed by the processor, cause

10   [[causing]] the processor to perform the computer-implemented

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11   steps of:

12   receiving, at a master, a request message which indicates that a

13   requestor needs the particular resource of the plurality of

14   resources, where the master maintains the plurality of lock

15   mode records corresponding to the plurality of resources;

16   designating one holder out of a plurality of holders wherein the

17   plurality of holders all have respective lock modes for the

18   particular resource;

19   sending a plurality of broadcast inform lock holder messages to the

20   plurality of holders except for the one holder indicating that

21   the requestor needs the particular resource;

22   receiving a plurality of update lock messages from the plurality of

23   holders except for the one holder, wherein the plurality of

24   update lock messages indicates the respective lock modes

25   of the plurality of holders;

26   sending, from the master to the one holder, an inform lock holder

27   message to indicate to the one holder that the requestor

28   needs the particular resource;

29   receiving a lock access message from the requestor where the lock

30   access message indicates that the requestor has assumed the

31   lock mode relative to the particular resource; and

32   performing an update to the particular lock mode record of the

33   plurality of lock mode records in response to receiving the

34   lock access message without receiving a status

35   message[[;]],

36   wherein the status message is a down-convert message or a release

37   lock message[[;]], and

38   wherein the update indicates that the requestor has assumed the

39   lock mode on the particular resource.

1   24.   (Currently amended) A computer system, comprising:

2   a processor;

3   a [[memory]] computer-readable medium, coupled to the processor, containing:

4   a resource and a first lock mode on the resource; and

5   a lock mode record associated with the resource[[;]], wherein the

6   computer-readable medium stores having stored instructions of the

7   computer system which, when executed by the processor, cause

8   causing the processor to perform the computer-implemented steps

9   of:

10   receiving, at a holder, an inform lock holder message that a

11   requestor needs the resource, [[where]] wherein the holder

12   currently holds the resource and the first lock mode on the

13   resource;

14   transferring the resource to the requestor in response to receiving

15   the inform lock holder message without sending a status

16   message to a master of the resource wherein the status

17   message is a down-convert message or a release lock

18   message; and

19   updating the lock mode record, maintained by the holder, to

20   indicate that the holder has down-converted from the first

21   lock mode to a second lock mode for the resource.

1 25. (Currently amended) The computer system of Claim 24, wherein the memory

2   having stored instructions of the computer system causing the processor to

3   perform the computer-implemented steps further comprise comprising the

4   computer-implemented step steps of:

5   sending an update lock message to the master, wherein the update lock message

6   indicates the second lock mode for the resource.

1 26. (Currently amended) The computer system of Claim 24, wherein the memory

2   having stored instructions of the computer system causing the processor to

3   perform the computer-implemented steps further comprise comprising the

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4   computer-implemented steps of:

5   receiving, at the holder, a message from a sender[[;]], wherein the message

6   includes a third lock mode on the resource;

7   detecting that the first lock mode and the third lock mode do not match; and

8   sending a lock status message to the sender, wherein the lock status message

9   includes the first lock mode.

1 27. (Currently amended) The computer system of Claim 24 wherein ~~the memory~~

2   ~~having~~

3   ~~stored instructions of the computer system causing the processor to perform~~ the

4   computer-implemented steps further <u>comprise</u> ~~comprising~~ the computer-

5   implemented steps of:

6   receiving, at the holder, a single batched inform lock holder message that contains

7   all information necessary to transfer the resource to a plurality of

8   requestors; and

9   transferring the resource to the plurality of requestors.

1 28. (Currently amended) A computer-readable medium carrying one or more

2   sequences of instructions for managing access to a resource, wherein execution of

3   the one or more sequences of instructions by one or more processors causes the

4   one or more processors to perform the steps of:

5   sending, from a requestor to a master of the resource, a lock mode request for a

6   lock mode on the resource;

7   receiving the resource at the requestor from a holder of the resource; and

8   accessing the resource as if the requestor had been granted the lock mode request

9   without waiting to receive an express lock mode grant from the master.

1 29. (Currently amended) The computer-readable medium of Claim 28<u>, wherein</u>

2   <u>execution of the one or more sequences of instructions by the one or more</u>

3   <u>processors causes the one or more processors to further perform the steps of</u>

4   ~~further comprising the sequence of instructions for performing the steps of~~:

12

5   detecting [[whether]] that the step of receiving the resource at the requestor [[will

6   occur]] has occurred; and

7   if the requestor does receive the resource; sending a lock assume message from

8   the requestor to the master to inform the master that the requestor has

9   assumed the lock mode relative to the resource.

1   30.   (Currently amended) A computer-readable medium carrying one or more

2   sequences of instructions for managing access to a resource, wherein execution of

3   the one or more sequences of instructions by one or more processors causes the

4   one or more processors to perform the steps of:

5   receiving, at a holder, an inform lock holder message that a requestor needs the

6   resource, where the holder currently holds the resource and a first lock

7   mode on the resource;

8   transferring the resource to the requestor in response to receiving the inform lock

9   holder message without sending a status message to a master of the

10   resource wherein the status message is a down-convert message or a

11   release lock message; and

12   updating a lock mode record, maintained by the holder, to indicate that the holder

13   has down-converted from the first lock mode to a second lock mode for

14   the resource.

1   31.   (Currently amended) The computer-readable medium of Claim 30, wherein

2   execution of the one or more sequences of instructions by the one or more

3   processors causes the one or more processors to further perform the step of further

4   comprising the sequence of instructions for performing the steps of:

5   sending an update lock message to the master, wherein the update lock message

6   indicates the second lock mode for the resource.

1   32.   (Currently amended) The computer-readable medium of Claim 30, wherein

2   execution of the one or more sequences of instructions by the one or more

3   processors causes the one or more processors to further perform the steps of

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4   ~~further comprising the sequence of instructions for performing the steps of~~:

5   receiving, at the holder, a message from a sender[[;]], wherein the message

6   includes a third lock mode on the resource;

7   detecting that the first lock mode and the third lock mode do not match; and

8   sending a lock status message to the sender[[;]], wherein the lock status message

9   includes the first lock mode.

1   33.   (Currently amended) The computer-readable medium of Claim 30, wherein

2   execution of the one or more sequences of instructions by the one or more

3   processors causes the one or more processors to further perform the steps of

4   ~~further comprising the sequence of instructions for performing the steps of~~:

5   receiving, at the holder, a single batched inform lock holder message that contains

6   all information necessary to transfer the resource to a plurality of

7   requestors; and

8   transferring the resource to the plurality of requestors.

1   34.   (Currently amended) The method for Claim 30, wherein execution of the one or

2   more sequences of instructions by the one or more processors causes the one or

3   more processors to further perform the step of ~~further comprising the computer-~~

4   ~~implemented steps of~~:

5   sending a lock access message from the holder to a master.

1   35.   (Currently amended) A computer-readable medium carrying one or more

2   sequences of instructions for managing access to a resource, wherein execution of

3   the one or more sequences of instructions by one or more processors causes the

4   one or more processors to perform the steps of:

5   receiving, at a master, a request message which indicates that a requestor needs a

6   particular resource of a plurality of resources, [[where]] wherein the

7   master maintains a plurality of lock mode records corresponding to the

8   plurality of resources;

9   sending, from the master to a holder, an inform lock holder message to indicate to

10   the holder that the requestor needs the particular resource;

11   receiving a lock access message from the requestor where the lock access message

12   indicates that the requestor has assumed a lock mode relative to the

13   particular resource; and

14   performing an update to a particular lock mode record of the plurality of lock

15   mode records in response to receiving the lock access message[[;]]‚

16   wherein the update indicates that the requestor has assumed the lock mode

17   on the particular resource.

1   36. (Currently amended) The computer-readable medium of Claim 35‚ wherein the

2   step of performing an update to a particular lock mode record of the plurality of

3   lock mode records in response to receiving the lock access message[[:]] is

4   performed prior to receiving any status message from the holder relating to the

5   particular resource[[;]] ‚ and wherein the status message is a down-convert

6   message or a release lock message.

1   37. (Currently amended) The computer-readable medium of Claim 35‚ wherein the

2   step of performing an update to a particular lock mode record of the plurality of

3   lock mode records in response to receiving the plurality of lock mode records in

4   response to receiving the lock access message[[:]] is performed without receiving

5   the status message from the holder relating to the particular resource[[;]] ‚ and

6   wherein the status message is a down-convert message or a release lock message.

1   38. (Currently amended) The computer-readable medium of Claim 35‚ wherein

2   execution of the one or more sequences of instructions by the one or more

3   processors causes the one or more processors to further perform the steps of

4   ~~further comprising sequences of instructions for performing the step of~~:

5   receiving‚ at the master‚ a plurality of request messages which indicate that a

6   plurality of requestors need the particular resource; and

7   sending‚ from the master to the holder‚ the inform lock holder message‚ wherein

8   the inform lock holder message contains all information from the plurality

15

9   of request messages that is necessary for the holder to transfer the

10   particular resource to the plurality of requestors.

1   39.   (Currently amended) The computer-readable medium of Claim 35, wherein

2   execution of the one or more sequences of instructions by the one or more

3   processors causes the one or more processors to further perform the steps of

4   ~~further comprising sequences of instructions for performing the step of~~:

5   receiving, at the master, a message from a sender[[;]], wherein the message

6   includes a second lock mode on the particular resource;

7   detecting that the lock mode and the second lock mode do not match; and

8   sending a lock status message to the sender[[;]], wherein the lock status message

9   includes the lock mode.

1   40.   (Currently amended) The computer-readable medium of Claim 35, wherein

2   execution of the one or more sequences of instructions by the one or more

3   processors causes the one or more processors to further perform the steps of

4   ~~further comprising sequences of instructions for performing the step of~~:

5   receiving, at the master, a second request message[[;]], wherein the request

6   message and the second request message both contain requests for the

7   resource in exclusive lock mode; and

8   ~~queueing~~ queuing the second request message until the master receives the lock

9   access message from the requestor.

1   41.   (Currently amended) A computer-readable medium carrying one or more

2   sequences of instructions for managing access to a resource, wherein execution of

3   the one or more sequences of instructions by one or more processors causes the

4   one or more processors to perform the steps of:

5   receiving, at a master, a request message which indicates that a requestor needs a

6   particular resource of a plurality of resources, where the master maintains

7   a plurality of lock mode records corresponding to the plurality of

8   resources;

9   designating one holder out of a plurality of holders wherein the plurality of

10   holders all have respective lock modes for the particular resource;

11   sending a plurality of broadcast inform lock holder messages to the plurality of

12   holders except for the one holder indicating that the requestor needs the

13   particular resource;

14   receiving a plurality of update lock messages from the plurality of holders except

15   for the one holder[[;]],

16   wherein the a plurality of update lock messages indicates the respective lock

17   modes of the plurality of holders;

18   sending, from the master to the one holder, an inform lock holder message to

19   indicate to the one holder that the requestor needs the particular resource;

20   receiving a lock access message from the requestor where the lock access message

21   indicates that the requestor has assumed a lock mode relative to the

22   particular resource; and

23   performing an update to a particular lock mode record of the plurality of lock

24   mode records in response to receiving the lock access message without

25   receiving a status message[[;]],

26   wherein the status message is a down-convert message or a release lock

27   message[[;]], and

28   wherein the update indicates that the requestor has assumed the lock mode on the

29   particular resource.